

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau(43) International Publication Date
24 July 2003 (24.07.2003)

PCT

(10) International Publication Number
WO 03/059861 A1(51) International Patent Classification⁷: C07C 51/373,
62/16, 67/333, 69/757

(21) International Application Number: PCT/JP02/13576

(22) International Filing Date:
26 December 2002 (26.12.2002)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
2002-003177 10 January 2002 (10.01.2002) JP(71) Applicant (for all designated States except US): SUM-
ITOMO CHEMICAL COMPANY, LIMITED [JP/JP];
5-33, Kitahama 4-chome, Chuo-ku, Osaka-shi, Osaka 541-
8550 (JP).

(72) Inventor; and

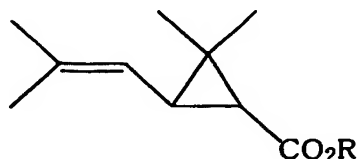
(75) Inventor/Applicant (for US only): YOSHIKAWA, Kouji
[JP/JP]; 9-5-1, Hon-machi, Toyonaka-shi, Osaka 560-0021
(JP).(74) Agents: AOYAMA, Tamotsu et al.; Aoyama & Partners,
IMP Building, 3-7, Shiromi 1-chome, Chuo-ku, Osaka-shi,
Osaka 540-0001 (JP).(81) Designated States (national): AE, AG, AL, AM, AT, AU,
AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU,
CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
GM, HR, HU, ID, IL, IN, IS, KE, KG, KR, KZ, LC, LK,
LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX,
MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG,
SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC,
VN, YU, ZA, ZM, ZW.(84) Designated States (regional): ARIPO patent (GH, GM,
KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),
Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE,
ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SI, SK,
TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,
GW, ML, MR, NE, SN, TD, TG).

Published:

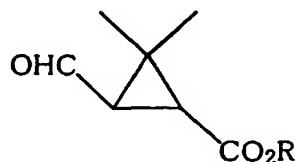
- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: PROCESS FOR PRODUCTION OF 3,3-DIMETHYL-2-FORMYLCYCLOPROPANECARBOXYLIC ACID DERIVATIVES



(1)



(2)

(57) Abstract: A process for the production of a 3,3-dimethyl-2-formylcyclopropanecarboxylic acid derivative of formula (2):wherein R is hydrogen, substituted or unsubstituted alkyl, substituted or unsubstituted aryl, or substituted or unsubstituted aralkyl, which process comprises reacting a 3,3-dimethyl-2-(2-methyl-1-propenyl)cyclopropanecarboxylic acid compound of formula (1):wherein R is as defined above, with a periodic acid compound in the presence of a ruthenium compound.

501,094



WO 03/059861 A1

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C07C51/373 C07C62/16 C07C67/333 C07C69/757

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C07C

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, CHEM ABS Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	EP 0 444 708 A (OTSUKA KAGAKU KK) 4 September 1991 (1991-09-04) abstract page 4, line 39-58 page 7, line 14 -page 8, line 7	1-4, 6
Y	DATABASE WPI Section Ch, Week 199340 Derwent Publications Ltd., London, GB; Class B05, AN 1993-317413 XP002238825 & JP 05 229981 A (TAKASAGO PERFUMERY CO LTD), 7 September 1993 (1993-09-07) abstract --- -/--	1-4, 6

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

* Special categories of cited documents:

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

T later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

X document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

Y document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

& document member of the same patent family

Date of the actual completion of the international search

6 May 2003

Date of mailing of the international search report

21/05/2003

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

DeLanghe, P

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	<p>DATABASE WPI Section Ch, Week 198033 Derwent Publications Ltd., London, GB; Class E14, AN 1980-57907C XP002238826 & JP 55 087739 A (MITSUI PETROCHEM IND CO LTD), 2 July 1980 (1980-07-02) abstract</p> <p>---</p>	1-4,6
Y	<p>CROMBIE, L. ET AL: "Total Synthesis of the Macrocyclic Diterpene (-)-Casbene, the Putative Biogenetic Precursor of Lathyrane, Tiglliane, Ingenane, and Related Terpenoid Structures" JOURNAL OF THE CHEMICAL SOCIETY, PERKIN TRANSACTIONS I, 1980, pages 1711-1717, XP002238824 page 1713, column 1, paragraph 2 page 1714, column 2, paragraph 3</p> <p>-----</p>	1-4,6

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/JP 02/13576

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
EP 0444708	A	04-09-1991	JP 3007986 B2	14-02-2000
			JP 3255066 A	13-11-1991
			DE 69118001 D1	25-04-1996
			DE 69118001 T2	18-07-1996
			EP 0444708 A2	04-09-1991
			US 5126447 A	30-06-1992
<hr/>				
JP 5229981	A	07-09-1993	NONE	
<hr/>				
JP 55087739	A	02-07-1980	NONE	
<hr/>				